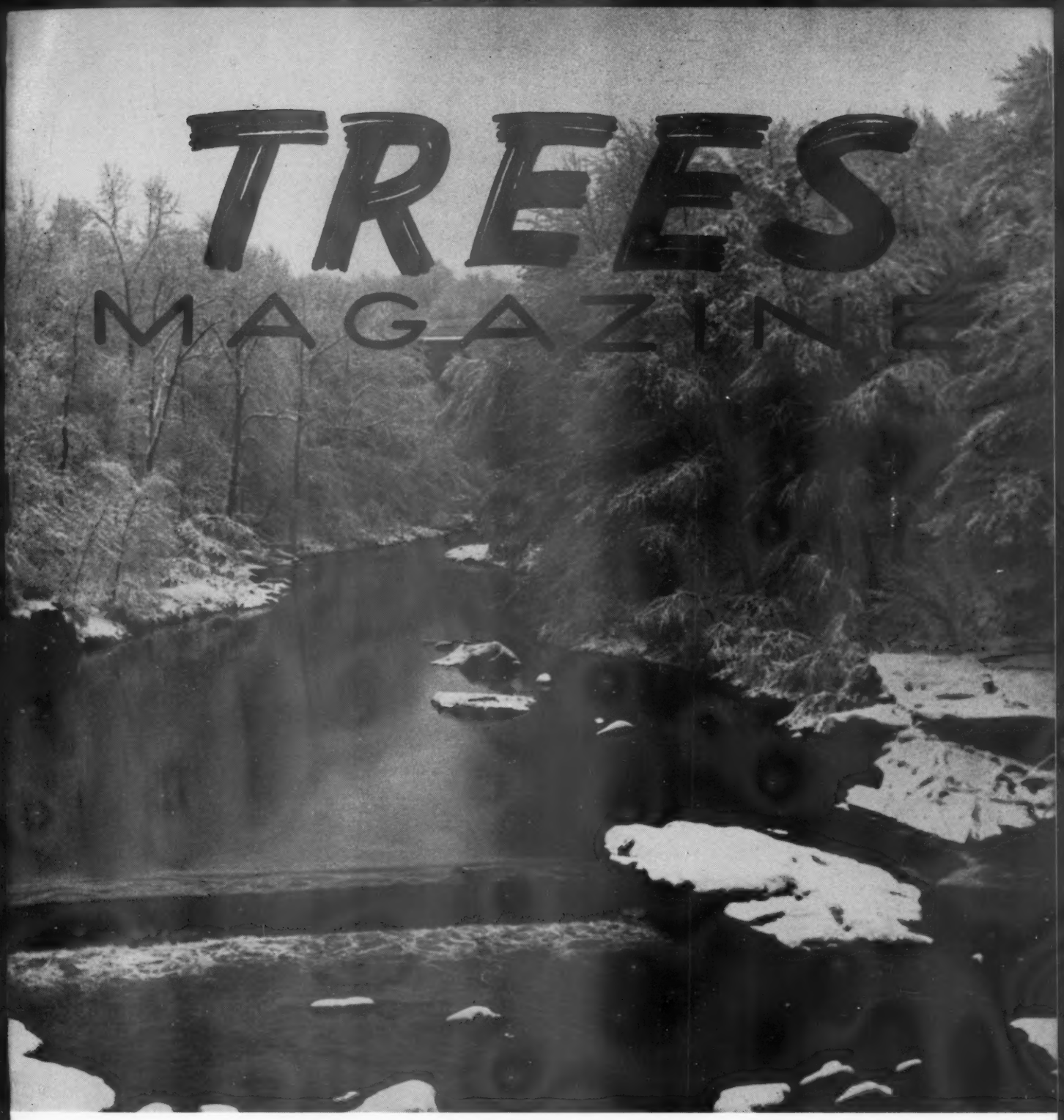
# TREES MAGAZINE



*Winter On The Rocky River At Olmsted Falls, Ohio*

**A Very Merry Xmas and a Peaceful New Year To All From The Rancho**


**Power Line Design For Compatibility With Trees** *E. V. Sayles*

**Arboricultural Operations In Omaha** *Charles W. Warren*



Nov.-Dec., 1956 *The Journal of American Arboriculture* Vol 17—No. 1

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**TREES MAGAZINE**
**P. O. BOX 5**
**OLMSTED FALLS, O.**

# ALONG THE WAY With .... EDW. SCANLON

■ WHAT A FALL we've had (as of Nov. 12th). There is a BUCCANEER ROSE on the South side of the house that WON'T STOP FLOWERING. Also in bloom, PAULS SCARLET THORNS, Weeping cherries and SEVERAL VARIETIES OF CRAB—but is it dry!, only a TRACE OF RAIN in two months—and ALL SUMMER ALL WE HAD was rain.

■ **We had a HARD FROST on Oct. 6 that made A SKIM OF ICE, and another Nov. 9, with maybe a few in between. SOME TREES are STILL IN LEAF and others still COLORING GOOD—but dropping fast.**

■ You can LEARN SOMETHING every day, that is if you are NOT ONE OF THE REAL smart ones, and here is a TIDBIT we pass on—there is A TREE grown and ADVERTISED because it is ATTRACTIVE TO WORMS—no, NOT silk worms—just plain OLD FISHING WORMS—most people scream if THERE IS A POSSIBILITY of even one bitsy worm that likes their tree—THE TREE IS, yipe, CATALPA SPECIOSA.

■ **In the event you are ONE WHO FIDDLES with Kodachrome slides and DON'T KNOW what causes the IRIDESCENT RINGS, that sometimes show up when SLIDES ARE MOUNTED, they are known as NEWTON RINGS. Can be overcome by SWITCHING THE GLASSES around.**

■ Nov. 20th—Am sitting in the FOG-BOUND Philadelphia Airport with a FOUR HOUR WAIT for a ride to OLMSTED FALLS—but it still BEATS A TRAIN—doesn't happen too often—FORTUNATELY.

■ **Enjoyed a RARE PRIVILEGE on Oct. 16. Met the very FAMOUS and WONDERFUL BUILDER of Rochester's magnificent Durand-Eastman Park—BARNEY SLAVIN. BARNEY at 86 is recovering from an operation but still FAVORED US with a 2 hour PERSONALLY CONDUCTED tour of this BEAUTIFUL MASTERPIECE HE CARVED out of the sand dunes on the shores of LAKE ONTARIO.**

■ We don't think ANY MAN in this country HAS CREATED a more PRICELESS MASTERPIECE, whatever the medium. in the HISTORY OF THIS COUNTRY. Pretty broad statement, but if you have seen BARNEY'S PARK in the SPRING OR FALL, or anytime for that matter, as we have, WE FAIL TO UNDERSTAND HOW, for once, you could disagree WITH A. W.

■ **On October 16th the FALL COLOR was at ITS PEAK. It was BREATH-TAKING. The Birches and Hemlocks, Red Maples, Sugars, Oxydendrums, Korean Mountain-ash, Dogwoods, in FACT EVERYTHING was simply a riot of color. The COLORFUL TREES, reflected in the several lakes BARNEY BUILT, defy description.**

■ We took COLOR PICTURES by the dozens and as LUCK WOULD HAVE IT we HIT THE JACKPOT. We'll proudly SHOW THEM ANYTIME without arm twisting.

■ **BARNEY SHOWED US many of the BEAUTIFUL SELECTIONS he made and OTHER RARE SPECIES he nurtured thru HIS 50 SOME YEARS of devoted stewardship to the CITIZENS OF ROCHESTER. This city has BADLY MISSED A BET in NOT RETAINING this KINDLY AND TALENTED MAN to still DIRECT THE DESTINY of this priceless park that HE CREATED and LOVES SO DEARLY. They can STILL WAKE UP and PROFIT from his GENIUS—believe me.**

■ We met FRANK KARPICK at D-E Park. FRANK had STRAYED OFF HIS BUFFALO RESERVATION, so with JAKE GERLING we made up a foursome TO LISTEN TO BARNEY. Of particular interest to me was a MINIATURE SUGAR MAPLE BARNEY had developed—It is ACER SENECAENSIS, a cross between A. leuco-derme (Chalk Maple) and A. saccharum. It was in BEAUTIFUL COLOR and only GOES TO ABOUT 25 FEET with a TYPICAL SUGAR FORM.

■ **We TIP OUR HAT to the CREATOR OF THE SPLENDOR we have enjoyed so many times in D-E Park—and THANKS BARNEY, for the RARE PRIVILEGE of those TOO SHORT TWO HOURS you gave us.**

■ WINTER sure came WITH A BANG. Went over to FLINT to visit the LITTLE BRUDDER for THANKSGIVING when zowie out came the BOTTOM OF THE THERMOMETER. Snow, wind and cold. BUT IT WAS NICE anyway and DOUBLY SO because we had PLENTY to BE THANKFUL FOR—chief of which was that we were IN THE GOOD U.S.A. and not UNDER THE HEEL of the KREMLIN SLOBS—those boys are TALKING THEMSELVES out of a job.

■ **Spent a FEW HOURS looking at street trees with BILL RUTH, CITY FORESTER, in Flint. Bill is GRADUALLY WORKING AWAY FROM the old favorites and getting into the SOUND TREES. One nice thing noted—THEY ARE NOT NIGGARDLY with treelawn space there—12' TO 20 FOOTERS.**

■ The program for the SECOND STREET TREE & UTILITY CONFERENCE is shaping up nicely. The FEATURE OF THIS MEETING will be the BROADENING OF THE FOUNDATION OF THE CONFERENCE to include OTHER FIELDS THAT ARE ALSO INVOLVED in the use of trees, street lights and overhead lines. The Conference WILL BE HELD in Cleveland March 7-8 AT THE HOTEL CLEVELAND.

■ **In ADDITION to the FINE PROGRAM enjoyed in Atlantic City at the NEW JERSEY FEDERATION OF SHADE TREE COMMISSIONS meeting, we picked up a NEW BOARDER FOR THE RANCHO. Stopped at a kennel on the way back to Philadelphia to catch a plane, and SAW A COCKER that LOOKED EXACTLY LIKE OUR POOCHIE, who died in July. Walked into the airport WITH THE LITTLE GUY. Rented a kennel to TRANSPORT HIM TO CLEVELAND. When a Convair TAKES OFF it sounds like the ROOF WAS FALLING IN. Was scared stiff he would BE PETRIFIED BY THE ROAR, but the CUTE STEWARDESS checked him for me after WE GOT UP and he was TAKING IT VERY SERENELY. He has TAKEN OVER THE RANCHO.**

■ SEVERAL DAYS later SOME SLOBS drove by the Rancho and TOSSED OUT a little BROWN AND BLACK MUTT. He was HALF STARVED and COULD HARDLY WALK. We found him and FED HIM and now HE IS ENTRENCHED at the RANCHO DOG BAR. He's going to be A DANDY.

■ **In case YOU ARE NOT FAMILIAR with the GLOBE ASH (FRAXINUS EXCELSIOR UMBRACULIFERA) you should be. It is a BEAUTIFUL TREE that will go to ABOUT 30 FEET and should make a BEAUTIFUL FORMAL STREET TREE—especially in areas where DUTCH ELM DISEASE precludes the USE OF THE GLOBE ELM (U. carpinifolia umbraculifera).**

■ DON'T OVERLOOK the MANY FINE GLOBEHEADED TREES in your STREET PROGRAMS. They should ALSO BE USED MORE in INDUSTRIAL AND GENERAL LANDSCAPING. People ADMIRE THESE FUNCTIONAL TREES very much as we have FOUND OUT IN CLEVELAND. Others who HAVE USED THEM also REPORT FINE PUBLIC REACTION.

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**TREES MAGAZINE**
**7621 Lewis Rd., Olmsted Falls, Ohio**

*The Editors of TREES invite discussions, comments and all type of literary materials pertaining to trees and tree preservation from any person engaged either in the scientific advancement or commercial development of the field.*

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EDWARD H. SCANLON, Editor
7621 Lewis Rd., Olmsted Falls, Ohio
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"No place is complete without trees. A home without trees is charmless; a road without trees is shadeless; a park without trees is purposeless; A COUNTRY WITHOUT TREES IS HOPELESS."

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# Out On A Limb

SMALL TREES WIN JERSEY "DEBATE."—

The heralded "debate" on large versus moderate trees held at the New Jersey Federation of Shade Tree Commissions meeting in Atlantic City Nov. 25 proved only one thing—everyone agreed on a point that to the best of our knowledge has never been in contention, big trees are needed and should be used where there is sufficient space to accommodate their king size proportions. But one of the vital and fundamental points that was not even mentioned was the fact that where today better than 90% of the trees used on city streets are species in the big category the percentage should, if the street tree manager is to operate on a sound scientific and economical basis, which of course adds up to common sense, be reversed. Better than 90% of the trees in any city should be in the small, medium and form (globe, pyramid, columnar, etc.) classes. That is the reason TREES has crusaded so long and so hard, and so emphatically for small trees. It didn't seem important to mention the trees everyone was familiar with—the ones that were *not being used* was the news.

There are few streets in few cities that have the space factors to accommodate forest giants. Less than 5% of the streets of any city will come under this classification.

Another point brought out by the proponents of the "Old Favorites" was that of shade. We thought it could have been harpooned with telling effect and thereby further strengthen the already strong case for small trees. How high a price can a city pay for shade along streets and is it needed? We do not think it is needed because times have changed from the days when people did a whole lot more walking than they do today and travel has also moved up from the 3 mile per hour horse and buggy to the powerful two and three hundred horsepower gasoline buggies of the past 20 years. If big trees planted for shade had been or still were properly spaced to display them as specimens instead of jam packed scarecrows, or a hedge on stilts, there would only be needed one-third to one-half the number of trees that are used, and by the same token only one-third to one-half the headaches, maintenance problems and high removal costs would be incurred.

Shade as a by-product of street trees should also be considered from another viewpoint. Even if the fastest growing tree is used it will sitll require at least ten years before it will cast more than token shade. Suppose for example that trees are planted in a treelawn where there is a five foot sidewalk and a thirty-five foot setback. Does anyone think for a minute that any tree is going to shade that house in ten years, or even in fifteen? It would seem that proponents of shade are thinking only of mature trees of considerable size and not of the years required to attain such size.

This brings up several more points. It was stated that some taxpayers squawk unless a real good sized tree, two to

three inches in caliper is planted in their treelawn. Having had considerable experience with this phase of street tree management we know that the case of the "squeaking wheel" is magnified out of all proportion, except perhaps its nuisance value. What about the 90 or 95 per cent of the people along the street who are grateful that the city is planting trees and make no complaint. Furthermore anyone who has planted any number of street trees knows that a tree ¾" to 1¼" in caliper has a ten to one better chance of survival than a 2" or 3" one and that within five years it will outdistance the larger tree and be a much better one. Also the loss in the smaller tree is considerably less and so is the purchase and planting price. With the greater survival the purpose in planting a single species along a street, uniformity and neat appearance, is also achieved. The use of the larger tree and the subsequent high loss in reestablishment probably accounts for the many many streets where every species under the sun can be found. People will plant their own tree if the city fails to replace the dead one and the result is a sorry mixture of fast growing brash wooded forest giants.

In relation also to the period required for a street tree to grow to sufficient size to shade a home forty feet away, is the factor of length of residence of the people living on the street at the time the trees are planted. While we have no figures on this interesting factor, it would seem improbable that more than 20 to 30 per cent of the residents would be there when the tree reached shade giving size. Actually we are planting those trees for people ten to fifteen years in the future, so the squawker who complains that he wants shade before he is ninety years old should be told to plant the necessary trees on his own property—then what does he plant?—usually a three foot whip that he bought at some chain store. He probably is the loudest wailer about taxes and the poor manner in which the city government is being operated, but still he insists on the tree department putting in a large costly tree which the tree planter knows is wrong but still he permits this senseless minority to sway his better judgment.

We do not feel that the municipality has a responsibility to any taxpayer to plant trees that while they may eventually make "shade" will do so only at a terrific cost in maintenance and when the "end of the line" is reached become a major costly removal job. We feel that the role trees should play and should always have played along streets is to embellish—and not necessarily by size. Primarily street trees should be functional. They should fit the available space, aerial, lateral and ground, at maturity. If they are selected on this basis they will serve with distinction. They will stabilize property values because they are a part of the landscaping and not detract from property values because they will not have taken over as all of the landscaping on a timber basis. Street trees should be in scale with the site; they can also be colorful with flower or foliage and functional as to form. Sound street tree management requires much sound thinking, a lot of doing and the intestinal fortitude to do it. The satisfaction of having done the job properly is worth the few bruises you get, and we have some. Yes, as it was pointed out in Atlantic City, we do have an axe to grind, but many will remember we have been grinding it since this magazine was born in 1937.

## Mass. Tree Wardens Program

PROGRAM—FIRST DAY, FEBRUARY 5, 1957

—MORNING SESSION—

9:30 Registration and Inspection of Exhibits (Registration in the lobby, Fee $1.00)

10:00 Coffee and Donuts

11:00 Raising Trees for Town Use
Mr. H. O. Cook, Chief Forester Massachusetts Division of Forests and Parks

11:30 Gypsy Moth Trapping Program
Mr. Warren G. Harding, U.S.D.A. Area Supervisor
Announcement of Banquet

Banquet Reservations must be picked up before 1:15 o'clock

NOON RECESS—
INSPECTION OF EXHIBITS

—AFTERNOON SESSION—

1:30 How About You — The Sale You Aren't Making
Mr. Harry L. Levin. President Business Equipment Corp.

2:15 Film (to be announced)

2:30 Financial Problems of Municipal Wardens and Foresters
Mr. Arthur H. MacKinnon, Comptroller — Brookline, Massachusetts

3:15 Talks from New England Telephone and Telegraph and New England Power Service Cos.

7:00 Banquet — Hotel Kenmore, Boston — Presentation of Scholarship Awards

## A Visit With Barney Slavin

*The Editors first visit with the renowned Bernard H. "Barney" Slavin dean of the Rochester, N. Y., park system and creator of Durand-Eastman Park was a memorable one. Seated with Mr. Slavin in his home are, Jake Gerling, for many years the Superintendent of D-E Park; Mr. Slavin and on the right Edward H. Scanlon, Editor of TREES Magazine.*

PROGRAM—SECOND DAY, FEBRUARY 6, 1957

—MORNING SESSION—

10:00 Oak Wilt—A Motion Picture Courtesy, National Oak Wilt Research Committee Memphis, Tenn.

10:30 Street Tree Planting
Mr. Artemas P. Richardson

11:15 Highway Ahead
Mrs. G. Kennard Wakefield
Chairman, Blue Star Memorial Highway Committee

NOON RECESS—
INSPECTION OF EXHIBITS

—AFTERNOON SESSION—

1:30 Mosquito Problems in the Eastern Middlesex Mosquito Control District
Mr. Robert Armstrong, Entomologist in Charge

2:15 Film (to be announced)

Tree and Landscape Service in Wichita doing $44,000 yearly. 4 good trucks, all necessary equipment. $18,000, terms. Kashfinder, Wichita, Kansas.

# Power Line Design For Compatibility With Trees

By E. V. Sayles
*General Engineering Supervisor,*
*Consumers Power Company,*
*Jackson, Michigan*

*(Editor's Note: This paper by Mr. Sayles was given at the First Street Tree and Utility Conference held in Cleveland March 3-4, 1955. It is our plan to run each of the splendid papers given at this Conference in subsequent issues of TREES Magazine.)*

Mr. E. V. Sayles: Thank you, Mr. Chairman and gentlemen: I am happy to be here this afternoon and partake in the sessions of this Conference, which certainly is most important. Its importance is underscored by the fact that there are some 300 people who came here today from all over the country to find out some of the things we need to discuss in settling the long-range problems we have had before us so many years.

A few days ago there came across my desk a little story about a bank robbery. A cordon of police had been drawn tightly around the building, but the robber escaped. A police inspector drove up in a big red car and jumped out and came up to the first policeman and he said, "So you lost the fellow, did you? Did you guard all the exits?"

The policeman said, "We guarded all the exits, but we think he left by one of the entrances." (Laughter)

Now, Ladies and gentlemen, against that background there seems to be somewhat of a moral apropos to the aims of this Conference. Perhaps we have been guarding only the exits. In other words, perhaps for a great many years we have been trying only to find out how to get out of all this trouble. Perhaps the entrances have not been guarded, nor have we sought the entrances. It just occurs to me that today we are here to seek the entrances to the solutions of the problems ahead of us.

After I had prepared this paper and read it over, it occurred to me that there really were two parts to it. The first part has to do with investment—investment in facilities to serve. In any successful enterprise we always have to be concerned with investment. I like to think of *privilege* of investment. Privilege of investment is paid for in interest and taxes, and we must be very careful to keep that privilege. The second part of my paper has to do with various suggestions which might be of interest in helping to understand our mutual problems.

The letter of invitation to this conference was very clear in defining its purpose, and it left no doubt as to what is expected of those who participate in it. Surely, this is a wonderful opportunity for our respective interests to give and receive information which will enable one group to recognize the problems of the other.

It is much to the credit of the three sponsor organizations that we are assembled here today. It wasn't so many years ago that an attempt to hold such a meeting would have been foolhardy, because there was no recognition of the fact that a mutual interest really existed. Even as we meet today, there are uncertainties in our minds as to how our individual problems may be solved in a mutual atmosphere, but there can be no uncertainty of the fact that we have a single common problem. That problem is how best to serve the public. It is the public's property that we occupy when we plant our trees, install our street lights, and build our lines.

### *Kinds of Services*

Of the millions of people who live in this country, it is safe to say that the largest single group is occupied in serving the public. The National Shade Tree Conference, the Illuminating Engineering Society, and the Edison Electric Institute are all a definite part of this large group whose principal purpose in life is to serve the public. Each of us sells a service. The street lighting people sell a service which protects against the darkness of the night. The shade tree people sell a service which protects against the heat of the day. The power supply people sell a service which lights our homes and makes for comfortable living within them.

While it might seem that the services rendered by the three groups here represented differ widely, this is not the case. This is clearly illustrated when they are considered on a functional basis. It can be stated that:

> "Quality of service depends upon the Type of Facility Installed and also its Manner of Installation which determine the Investment in Facilities and consequently the Cost to the Resident." (Fig. 1).

Obviously, this statement illustrates the well-established fact that, in our economic system, the more you receive, the more you must pay. One great difficulty, however, is that there are many interests which compete for the American dollar. To those of us who have a part in influencing construction costs, it is mandatory that we keep these costs at a minimum value. This is a challenge to all of us.

### *Payment for Services*

It can be assumed that each of these three groups performs an essential service and that practically all people employ these services sooner or later. Of course, there are varying degrees of the services which we sell and it follows that each person, family, or resident enjoys them only to the extent that he is able or willing to pay for them. Payment always rests with the one who receives the services, although the identity of the ultimate payer is often obscured.

The credit system of our country permits settlement of obligations in many convenient ways. Settlement may be by direct cash payment for goods and services readily identifiable. It may be by payment through taxes levied for services received through governmental bodies. Settlement of debts is also made by direct cash payment to utilities for services received, the cost of which is directly affected by the investment which the utility must make to render these services. Regardless of the method of payment, the quality of service which a customer receives is directly related to what he pays for it, either directly or indirectly.

### *Origin of Common Problem*

During the installation of service facilities, conflicts often develop. After all, residences are located along streets and highways and there are well-established boundaries between the travel way and the property line. It is true that those who furnish services to a residence have clearly defined rights of occupancy between the street and the residence, and it is also true that they have a perfect right to occupy this same narrow strip of land with different facilities at the same time. This strip must be used for sidewalks, water and gas mains, trees, and pole and wire lines to carry street lights, power, and telephone circuits. When allowances are made for curbs, sidewalks, and the clearances which they require from trees and poles, the narrow strip left for these things may be as little as two or three feet and not usually more than eight or ten feet. The joint occupancy of this strip is the problem which we all must face and this is the problem we must solve. This is the problem we have tried to solve for a great many years. The fact that we have not reached the most satisfactory and economic solution is the reason why we are here today.

It has been previously stated that the quality and amount of service which a residence receives will be dependent upon the amount which the occupant is willing to pay for it. This applies to any kind of service, whether it be electricity for the home, lighting for the street, or shade for the yard. It is interesting to expand this statement to examine the principal factors included in it for the three service groups here represented. Figure I is quite elementary and, while it focuses attention upon the obvious fact that clearances are our common problem, it does help to

*(Continued on Page 14)*

# Arboricultural Operations In Omaha, Nebraska

*Prepared by*
CHARLES W. WARREN
*City Forester*

The paragraph as quoted below is taken from the charter that created the Park and Recreation Commission by a vote of the people of Omaha, Nebraska on November 5, 1946. The charter defines the responsibilities of the Commission. Article XVIII, Section 3, Paragraph 3, reads as follows:

> "The Commission shall exercise supervision and control over the planting and care of all trees, plants and shrubs of any kind in the public parks, parkways and other recreation grounds under its jurisdiction, as well as on or in the streets, boulevards, and driveways of the city."

The street trees of Omaha were last pruned approximately fifteen years ago. The present lack of care is showing up more each year in the form of dead branches and dead trees.

There are few things that give as much pleasure as the trees that line our city streets and cover our parks. We are under the threat of Dutch Elm disease that could drastically reduce our elm tree population. The cities that have lost a large per cent of their elms to this disease have found that it would have been much less expensive to care for their trees than to have to stand the expense of tree removal.

It is estimated that on our tree lined streets the street lights of Omaha are giving about fifty per cent efficiency. This is due, in a large part, to the low hanging limbs that prevent the light from reaching the place for which it is intended. Two of the principal purposes of adequate street lighting is to provide for safe driving conditions, to which so great a toll of life and limb can be attributed, and likewise to the reduction of crime.

## I
## THE PRESENT FORESTRY OPERATIONS

1. The city employs a forester who is under the Park Division of the Parks and Recreation Department. The forester furnishes technical supervision and direction for the park forestry operations. The park department has one full time tree surgeon who is directed by the parks General Foreman, from the recommendations made by the City Forester. The removal of trees is done by the labor crew during the winter season. The department spends approximately $15,000 per year—all phases.

2. The Street Department has a tree crew that does the work on boulevard trees. The City Forester has nothing to do with the direction of this crew. The Street Department spends approximately $15,000 a year on this operation.

3. By City Ordinance the home owner is responsible for the care and maintenance of the trees on the city parking that abutts their property.

4. Any person doing forestry work for hire in the City of Omaha must be licensed. Omaha, at this time, has sixty-six licensed foresters. These arborists are responsible to the City Forester.

5. The City Forester runs a house call and telephone call service for all the home owners in Omaha. There are about 5,000 telephone calls and 600 house calls serviced a year by the City Forester. That is an average of 14 telephone calls a day and two house calls a day. The larger per cent of these calls are serviced during the months of March through November. During the rush season, some calls are not serviced as promptly as they should be because it is a one-man operation.

6. Forestry meetings are held during the winter months for the commercial foresters by the City Forester. These meetings are intended to increase the knowledge of the practicing forester so that he can give the home owner a more efficient service. This winter the meetings are being held twice a month—on Tuesday evenings.

7. The City Forester works with the Boy Scouts, Girl Scouts, Y.M.C.A., Y.W.C.A., Garden Clubs and any other group that needs forestry direction.

8. Due to the accelerated growth of Omaha, about one hundred homes were moved during 1955. The City Forester must cover the house routes with the house movers and determine whether the route chosen will cause damage to the trees involved. If the route chosen will cause excessive damage to the trees another route must be found. This duty is very time consuming. The average time spent by the City Forester on the routing of a house is 2.5 hours, or over six weeks each year.

## PROPOSED STREET TREE DEPARTMENT FOR OMAHA, NEBRASKA

*INFORMATION*

1. Attached is a random sample survey of the forestry operations of thirty-five cities scattered throughout the United States. As you will see Omaha rates nearly at the bottom of the list on averages spent for tree care.

2. In Omaha we have 575 miles of paved streets, and 28 miles of boulevards, and 125 miles of unpaved streets.

The survey shows that thirty-one cities care for the trees on the parking and only four do not. Omaha is one of the four that does not care for city parking trees.

3. A forestry program must be projected at least fifty years. Most of the problems we have now are the product of a lack of planning. With the proper organization we can eliminate, for the most part, similar problems in the years ahead.

There is a large number of dangerous trees on our streets that should be removed in the interest of public safety.

4. Any forestry operation cannot be run as a complaint department and be efficient. It must be run on a schedule except for emergency work caused by storms.

### EQUIPMENT AND PERSONNEL NEEDED FOR PARK DEPARTMENT TREE CARE

| *PERSONNEL* | *Cost Per Year* |
|---|---|
| (2) Two man pruning crews @ $350 per month per man | $ 16,400.00 |
| (1) Two man brush crew @ $300 per month per man | 7,200.00 |
| | $ 23,600.00 |
| Equipment for each pruning crew (2) | |
| (1) ¾ Ton pickup truck | $ 2,000.00 |
| (1) 2 man power saw | 500.00 |
| (1) 1 man power saw | 340.00 |
| (2) Ladders | 90.00 |
| Miscellaneous equipment such as hand saws, cavity set, safety ropes and saddles, drills, axes, wedges, sledge safety signs, etc. | 600.00 |
| | $ 3,530.00 |
| Two Crews | $ 7,060.00 |
| Equipment for a brush crew | |
| (1) 1½ Ton Dump Truck | $ 3,000.00 |
| (1) 9" Brush Chipper | 2,600.00 |
| (1) 1 man power saw | 340.00 |
| | $ 5,940.00 |
| Equipment for Tree Spraying | |
| (1) Rotomist Sprayer | $ 3,600.00 |
| (2) 30-35 g.p.m. Hydraulic Sprayer @ $2,500 | 5,000.00 |
| | $ 8,600.00 |
| These sprayers can be operated by the pruning crews during the spray season. | |
| Materials needed for tree planting and moving. | |
| (1) 1½ Ton Bed Truck with 10 ton winch | $ 2,400.00 |
| (1) Tree Mover Complete | 2,000.00 |
| | $ 4,400.00 |
| PERSONNEL AND EQUIPMENT TOTAL | 49,600.00 |

*EQUIPMENT AND PERSONNEL NEEDED FOR CITY STREET CARE*

| *Personnel* | |
|---|---|
| (5) 3 man pruning crews @ $350 per month per man | $ 63,000.00 |
| (2) 2 man brush crews | |

*(Continued on Page 12)*

# Beaver Stump Cutter Incorporates New Principles

*The Beaver Stump Cutter from the rear showing the cutter head with its over 100 cutting teeth.* *From the side a view of the belts and pulleys that power the Beaver are shown.*

By J. W. Livingston and Leo O'Neil
*Champaign, Illinois*

Everything is mechanized in tree surgery today. We use chain saws, aerial booms, brush chipper, and high powered compressors for spraying, why are we still "Stone Age" in stump removal? Probably because we have been so busy cutting trees down we couldn't see that rapidly our city streets, parks and large University campuses are beginning to look as though they have been ravaged by some medieval plague. That is just what it looks like too, hundreds of grim reminders of once beautiful streets and lawns. Well, if we can't have our trees let's at least get ride of the pock marks and again have beautiful spacious green lawns.

Why have we allowed stumps to remain as eyesores or possible lawsuits? For just one reason, the cost is prohibitive. Labor is high if the work is done by hand. Equipment is costly if heavy equipment is used. Then after the stump is out by either of the preceding methods there is the problem of what is going to be done with the stump now that it is out of the ground. Then after we get rid of the heavy cumbersome stump we've got the problem of cleaning up and disposing of all the debris. We have to practically re-do the lawn for twenty or thirty feet around, if we have used heavy equipment. By the time we are finished we pray we never have to face a similar task again.

Then let's get smart again in this age of machinery and let's get mechanized for stump removal. Well, we certainly can't use our chain saws in the dirt to cut the stumps under ground. So what can we do? There is so much abrasive material to contend with around the base of a tree stump it's practically impossible to keep anything sharp enough to cut wood. The mining industry has long been busy at cutting rock and coal so let's incorporate these methods to our problem. With this idea in mind, The Beaver Stump Cutting Machine has been turned into a reality. The machine is mounted to the frame of a jeep equipped with power takeoff.

The stump is disintegrated by a rotary motion of a cutterhead provided with over one hundred high carbon steel teeth. The teeth are so separated that each companion tooth's cutting path is a small fraction of an inch in horizontal separation. Yet each tooth point has over two and a half inches clearance for three hundred and sixty degrees. This eliminates any possibility of clogging the cutterhead with already cut and foreign material.

The cutterhead is revolved at approximately 1300 RPM. The cutterhead is placed on the far side of the stump and lowered automatically to desired depth of cut. The jeep is then set in forward motion by use of a swing gear and oil clutch controlled by a governor which is regulated by constant RPM of the cutterhead. The forward motion speed is from 0 ft. per minute to max. of 4 ft. per minute. The depth of cut can be from a fraction of an inch to five inches depending on the density and hardness of the wood. Average cut is usually 2½ to 3½ inches. Small adjustments in depth of cut after the cutterhead is in the wood can be made by use of an automobile type steering wheel for this purpose.

A freshly cut elm stump of 36 inches in diameter can be cut to five or six inches below grade in from 30 to 45 minutes. The cut wood comes out in the form of sawdust and is easily shoveled up to be hauled away or to be used as a mulch near by. One of the most convenient assets of the machine is that irregular shaped (and it seems that nearly all stumps are irregular shaped) stumps offer no problem to the machine because of surrounding exposed roots, etc. can be cut in lawn mower fashion because of the constant forward movement of the entire machine.

The entirety of the machine is very simple with maintenance very low. The teeth are replaceable and only cost approximately six cents a piece. Every tooth in the cutterhead can be replaced in 20 to 25 minutes. In eight hours of operation the teeth will require from one to two resharpenings which can be done on the machine and only takes 15 to 20 minutes, with a portable grinder.

The machine is not quite ready for production as yet. A few refinements are in mind for the cutterhead which will make for even faster cutting and less maintenance. The machine has been demonstrated very favorably in competition with present machines already on the market. Production is expected to begin within the next few months.

## Maleic Hydrazide Proved Practical Along Highways

By WILBUR J. GARMHAUSEN
*Chief Landscape Architect, Ohio Dept. of Highways*

A new chemical, maleic hydrazide, applied with the same equipment used for herbicides, is now being tested in highway work. Designed to retard growth, especially of the grasses, this non toxic harmless chemical washes readily from equipment.

A factor not to be overlooked is that some of these different chemicals applied for specific purposes, may be mixed together and applied at the same time.

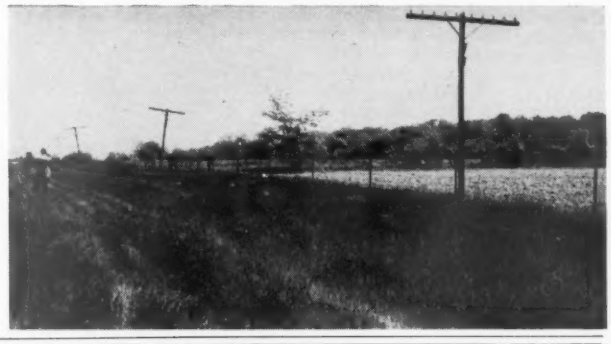
MH40 used on roadside areas was used at the rate of 10 pounds per acre, with 1½ gallon of 2,4-D added. Some areas were treated at the rate of 15 pounds per acre with very little visual difference in results.

Time of application is an important factor, this will not only depend upon weather conditions but also grass varieties. Generally the applications were made in mid-April and then not mowed until the middle of August and then only to eliminate some weeds which were not present at the time of application. However, most weeds were kept under control by the initial and successive sprayings.

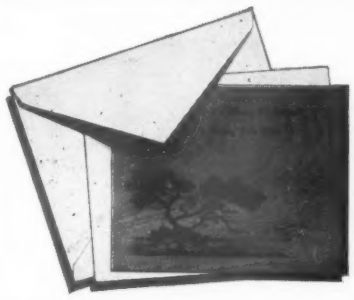
Some browning was noticeable but it was not objectionable. With fall rains these areas began to grow again and had a very healthy grass color. This gave effective control for approximately four months.

The average cost per mile for MH40 is approximately $102.50. Mowing costs averaged $119.00 per mile. Even at this rate there is a definite saving as men and equipment used on mowing can be used for other duties, as well as a saving in the maintenance and repair on mowing equipment.

With MH40 remaining at its present price, we feel that it is feasible and economical to use it only on areas that are inaccessible to mowing equipment, and on areas that require more than four mowings per season.



*The area treated with Maleic Hydrazide is shown by the dotted line to the right and rear of the figure. Other area is untreated.*

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1. 97% pure, organic sedge reed, bacterially high content.
2. One cubic foot makes upward to 50 cu. ft. of good soil, or 15 cubic feet of rich organic soil.
3. Excellent natural nitrogen—readiness to use—going to work at once.
4. Delightful flowing into the soil in handling—uniform structure creates maximum economy.
5. Normal moisture holding, with gradual delivery only to soil and plants assure the maximum in plant development.
6. A product processed, based on 30 years proven continuous operation, has a ph of 4.5 to 5.5, that is quickly, easily and economically adjusted to needs of any plant material.
7. The most efficient and economical soil building nature product in existence.

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**GREEN THUMB PEAT-HUMUS CO.**
CAPAC, MICHIGAN

**You Saw the Ad in TREES**

# Record Crowd At N. J. Federation Meet

By Herman S. Porter

The thirty-first annual meeting of the New Jersey Federation of Shade Tree Commissions, held at th Haddon-Hall in Atlantic City on Nov. 25, 26, and 27, provided a most interesting and informative program. The meeting was dedicated to Philip E. Alden, its retiring secretary-treasurer who has so ably served in that capacity since 1929.

On Sunday afternoon, November 25, the debate, "Resolved that Medium and Small Sized Trees are More Desirable for Street Planting than our Old Favorites," moderated by Raymond Korbobo, Associate Extension Specialist in Ornamental Horticulture, College of Agriculture, New Brunswick, N. J., drew over one hundred and fifty shade tree commissioners, shade tree superintendents, and commercial arborists. In addition to Mr. Korbobo, five other street tree experts and one public utility representative participated. They were Richard Walter, Maplewood, N. J., Carl J. Schiff, Brooklyn, N. Y., and George Vaupel, Newark, N. J. on the affirmative side; Philip E. Alden, Kearny, N. J., Harry E. Turner, East Orange, N. J., and John C. Kenealy, Ardmore, Pa., on the negative side. The conclusions to be drawn were that large street trees reduced the temperature in summer and make a city and its streets more attractive from both the ground and air. However, each size tree has its place provided the species is suitably picked for the planting location. It was advocated that underground utilities should be placed in the center of the street so they do not interfere with or cause the cutting of tree roots.

On Monday Dr. Henry T. Skinner, Director, United States National Arboretum, Washington, D. C., spoke on "Lesser Known Hardy Ornamental Trees; Their Dissemination, Propagation, and Uses." Dr. Skinner brought out the fact that in the arboretums of the country there are many fine shade trees hardly known, if known at all, in the nurseries or landscape trade. He advocated that seed be secured from these arboretums and planted in nurseries in the range of each tree's adaptability. Among the many trees he recommended for planting in the northeast were such trees as the hardy Sargent form of the Cedar of Lebanon, the Lace Bark Pine, Dawn Redwood, Turkey Oak which he mentioned as being quite drought resistant, Japanese Raisin tree, David Maple, Japanese Hornbeam, European Hornbeam, Coliseum Maple, Trident Maple, the Eucommia, Evodia, Pistachia, and Ilex Pedunculosa.

A very thorough dissertation on "The Correct Pruning of Trees. How, When, Why?" was given by Richard R. Fenska, author of *Tree Experts Manual.*

Donald Snyder, Research Assistant, College of Agriculture, New Brunswick, N. J., spoke on "Anthracnose on Plane and White Oak" stating that one delayed dormant spray of a phenyl mercury solution seemed to be far more effective in its control than some of the materials formerly used in several successive sprays.

The Monday afternoon session brought an informative panel discussion on "Progress in Tree and Shrub Disease Control; the Best Safe Fungicides; their Compatibilities with Insecticides." Panel leader was Dr. Spencer J. Davis, Extension Specialist in Pathology, College of Agriculture, Ithaca, N. Y., and with him on the panel were Dr. Donald S. Welch, Professor, Dept. of Plant Pathology, Cornell University, Ithaca, N. Y., and Dr. Philip L. Rusden, Plant Pathologist, Bartlett Tree Research Laboratories, Stamford, Conn. They dealt extensively with many of the newer fungicides which they have found superior for certain diseases to some so long used. Among those mentioned were Zineb, Ziram, Phygon, Ferbam, Copper A, Puratized, and Carothane. Also indicated were two antibiotics; one for Juniper rust, Actidone, and Agrimycin for Fire Blight control.

*Officers recently elected by the Arborists Association of New Jersey are L. to R.: T. George Conley, Secretary; Kenneth Gregory, President for 1957; Bernard Dyer, Recording Secretary; Elbert H. Evans, Vice President; Anthony C. Knof, Treasurer.*

On Tuesday, Dr. C. C. Hamilton, Research Specialist in Entomology, College of Agriculture, New Brunswick, N. J. headed a most successful panel on "Insecticides, their Uses, their Compatibilities with Fungicides and other Insecticides; Safety Factor as to Men, Plants, Animals, and Fish." With him on the panel were Dr. John G. Matthysee, Professor, Dept. of Entomolgy, Cornell University, Ithaca, N. Y., Dr. Andrew Forgash, Associate Research Specialist in Entomology, College of Agriculture, New Brunswick, N. J.; and Dr. Dale Bray, Entomologist, Bartlett Tree Research Laboratories, Stamford, Conn. This panel discussed the advantages of some of the newer insecticides as well as their effect on man, animals, and plants. The groups of insects they control, their weaknesses, phytotoxicity, and their residual effects were discussed at considerable length. The danger factor to spray operators with certain formulations was particularly stressed.

Albert W. Meserve, Tree Expert, Danbury, Conn., gave a most informative paper on, "How to Operate your Tree Business at a Profit," in which he delved into the secrets of success, a subject never before so thoroughly discussed at any conference. He stated that the first thing any operator should have is a first class accountant to keep a cost analysis.

The Tuesday afternoon program was a panel headed by Wallace A. Mitcheltree, Extension Specialist in Soils, College of Agriculture, New Brunswick, N. J. The three panelists were Edgar G. Rex, Chief of Plant Pathology, Division of Plant Industry, New Jersey Department of Agriculture, Trenton, N. J.; Homer L. Jacobs, Vice President of Research and Development, The Davey Tree Expert Co., Kent, Ohio; and Richard H. Viggars, Vice President, Southern Atlantic States Division, The F. A. Bartlett Tre Expert Co., Wilmington, Del. Mr. Viggars was not present but sent a splendid paper on the role of antibiotics as a factor that must be considered in future tree feeding programs. Edgar G. Rex and E. E. McCoy brought out the fact that they had found through foliar analysis that phosphate in their area was unnecessary in the feeding of Elm trees. They showed slides of an Elm's extensive root system. Homer L. Jacobs indicated that better distribution of fertilizers that have an organic base would do much to improve tree feeding work. He advocated the use of one ton per acre in tree feeding of a 12-4-4 fertilizer with holes very close together.

At the Monday evening banquet the Federation's deserving and retiring secretary-treasurer, Philip E. Alden was presented a very sizeable check, a ring, fishing equipment, and various other gifts. He has been the forester for the city of Kearny, N. J. from which position he is retiring in Aprii and will live in Florida. The New Jersey Federaton is probably the oldest group of its kind in existence and its work under Mr. Alden has made it the leader in the effectiveness of its work as well as its unusually informative annual meetings.

In addition to the presentation to Mr. Alden, one guest speaker of the evening was Phillip Alampi, New Jersey's new Secretary

*(Continued on Page 18)*

# Where *One* Person Sees Your Parks *100,000* See Your Streets

## DRESS THEM WITH SELECTED TAILORED TREES

*Here Is a Flowering Tree Tailored Exclusively by Us for Your Streets*

**Order the Beautiful Tailored Kwanzan Cherry now and get your streets on the hit parade.**

The spectacular Kwanzan Japanese Flowering Cherry (no fruit). Tailored for street use on 6' stems. Specify 6' stems when ordering. This height stem is needed for street clearance. A shorter stem will create a maintenance problem. Pictured is a mature tree.

### OTHER TAILORED TREES FOR SPRING

| | | |
|---|---|---|
| Littleleaf Linden | Hophornbeam | Tilford Globe Red Maple |
| Glastonbury Thorn | Pauls Scarlet Hawthorn | Gerling Red Maple |
| Ruby Red Horsechestnut | Washington Hawthorn | Modesto Ash |
| Zelkova | Scanlon Pyramid Red Maple | Idaho Locust |
| Buisman Elm | Irish Norway Maple | Globe Locust |
| Lavalle Hawthorn | Globe European Ash | and Dozens More |

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TAILORED TREES "To Fit the Space"

*(Continued from Page 7)*

| | |
|---|---|
| @ $300 per month per man | 14,400.00 |
| (1) General Foreman @ $380 per month | 4,560.00 |
| | $ 81,960.00 |

Equipment for pruning crews (5)

| | |
|---|---|
| (1) ¾ Ton Pickup Truck | $ 2,000.00 |
| (1) 2 Man Power Saw | 500.00 |
| (1) 1 Man Power Saw | 340.00 |
| Misc. Safety ropes and saddles, etc. | 900.00 |
| | $ 3,830.00 |

| | |
|---|---|
| Five Crews | $19,150.00 |
| Equipment for brush crews (2) | |
| (1) 1½ Ton Dump Truck | $ 3,000.00 |
| (1) 9" Brush Chipper | 2,600.00 |
| (1) 1 Man Power Saw | 340.00 |

*(Continued on Next Page)*

# This Is a Random Sample Survey of Street Tree Operation In Thirty-Six Cities Throughout the U. S.

| City | Pop. | Yearly Forestry Expd. | Per Capita Expend. | Number of Trees Cared for | Source of Money | Street Parking Tree Care Yes or No | Miles of Streets Serviced | License for Private Arborists Yes or No | Forestry Division Under What Dept. | Number of Full Time Forestry Employees |
|---|---|---|---|---|---|---|---|---|---|---|
| Escanaba, Mich. | 15,000 | $ 15,000 | 1.00 | 8,000 | General Bndget | yes | 25 | no | Parks & Forestry | 3 |
| Gardner, Mass. | 20,000 | 17,000 | 0.85 | 30,000 | " | yes | 121 | no | Welfare Dept. | 3 |
| Glen Falls, N. Y. | 20,000 | 18,000 | 0.90 | 6,500 | " | yes | 55 | no | Tree Commission | 8 |
| Oak Park, Mich. | 25,000 | 30,000 | 1.20 | 9,000 | " | yes | 69 | no | City Manager | 7 |
| Hutchinson, Kans. | 36,000 | 17,500 | 0.49 | 50,000 | " | yes | 200 | no | Parks & Auditorium | 5 |
| Manchester, Conn. | 38,000 | 15,000 | 0.39 | 1,600 | " | yes | 165 | yes | Park Depart. | 2 |
| Wauwatosa, Wisc. | 45,000 | 91,000 | 2.01 | 19,200 | " | yes | 98 | no | Park Board | 15 |
| White Plains, N. Y. | 50,000 | 35,000 | 0.70 | 5,000 | " | yes | 100 | no | Public Works | 7 |
| Boise, Idaho | 54,000 | 50,000 | 0.93 | 25,000 | " | yes | 180 | yes | Park Depart. | 9 |
| Passaic, N. J. | 54,000 | No Fig. | ..... | 10,000 | " | yes | 40 | no | Pks. & Pub Bldgs. | 8 |
| Colorado Springs, Colo. | 60,000 | 44,000 | 0.73 | 40,000 | " | yes | 200 | no | Park Depart. | 11 |
| Pontiac, Mich. | 75,000 | 32,000 | 0.43 | 15,000 | " | yes | 226 | no | Parks & Recreation | 9 |
| Columbia, S. C. | 100,000 | 66,500 | 0.66 | 54,000 | " | yes | 238 | yes | Public Works | 18 |
| South Bend, Ind. | 115,000 | 49,530 | 0.43 | 46,000 | Tax Assessment | yes | 289 | yes | Park Depart. | 10 |
| Lincoln, Nebr. | 120,000 | 25,000 | 0.21 | 217,000 | General Budget | yes Removal Only | 500 | no | Park Dept. | 6 |
| Fort Wayne, Ind. | 136,800 | 84,887 | 0.62 | 72,000 | Mill Levy | yes | 380 | yes | Board of Park Commissioners | 14 |
| Yonkers, N. Y. | 165,000 | 54,500 | 0.33 | 30,000 | General Budget | yes | 250 | no | Public Works | 14 |
| New Haven, Conn. | 165,500 | 79,100 | 0.48 | 125,000 | " | yes | 260 | yes (State) | Public Parks Comm. | 18 |
| Spokane, Wash. | 178,000 | Park Trees 6,000 | 0.03 | 30,000 | General Budget | no | ..... | no | | |
| Des Moines, Iowa | 185,000 | 100,000 | 0.54 | 100,000 | Mill Levy | yes | 640 | no | Public Works | 21 |
| Hartford, Conn. | 185,000 | 58,000 | 0.32 | 20,000 | General Budget | yes | 216 | yes (State) | Parks & Recreation | 14 |
| Salt Lake City, Utah | 200,000 | 45,000 | 0.23 | 150,000 | " | yes | 475 | yes | Public Property | 8 |
| Wichita, Kans. | 217,197 | 137,380 | 0.63 | 150,000 | Mill Levy | yes | 500 paved 380 unp'ed | no | Board of Park Commissioners | 32 |
| Richmond, Va. | 239,000 | 102,400 | 0.43 | 204,000 | General Budget | yes | 583 | no | Division of Street Tres | 21 |
| Omaha, Nebraska | 275,000 | 15,000 Str. Dept. 15,000 Pk. Dept. | 0.09 | 75,000 | General Budget | Street—no Blvd.—yes | 28 | yes | Parks & Recreation | 4 |
| Cleveland, Ohio | 925,000 | 375,000 | ..... | 130,000 | " | only | 1300 | no | Dept. of Pub. Prop. | 40+ |
| Dayton, Ohio | 300,000 | 100,000 | 0.33 | 100,000 | " | yes | all | no | Welfare Dept. | 22 |
| Toledo, Ohio | 325,000 | 170,000 | 0.52 | 200,000 | 1% Payroll Tax | yes | 600 | no | Public Welfare | 32 |
| Portland, Oregon | 400,000 | 0 | ..... | 0 | 0 | no | 0 | no | Park Bureau | 0 |
| Columbus, Ohio | 410,000 | 50,000 | 0.12 | 100,000 | General Budget | yes | 700 | no | Division of Parks and Forestry | 15 |
| Denver, Colo. | 450,000 | 45,000 | 0.10 | 220,000 | " | Emergency only no | 1300 | yes | Parks & Improvement | 15 |
| Milwaukee, Wisc. | 637,400 | 837,900 | 1.32 | 200,000 | " | yes | 950 | yes | Public Works and Bureau of Forestry | 142 |
| Buffalo, N. Y. | 650,000 | 200,000 | 0.31 | 350,000 | " | yes | 666 | no | Department of Parks | 27 |
| Pittsburgh, Pa. | 673,700 | 98,700 | 0.15 | No Census | " | yes | No Survey | no | Parks & Recreation | 21 |
| Los Angeles, Calif. | 1,970,000 | 401,794 | 0.21 | 380,000 | Tax Assessment Gen. Budget | yes | 5,500 | no | Parks and Recreation | 75 |
| New York, N. Y. | 3,000,000 | 500,000 | 0.17 | 230,000 | General Budget | yes | No Survey | no | Parks | 80 |

(a) Eighty-nine per cent of the cities surveyed care for trees in the city parking.
(b) Average cost per tree cared for is $1.23.
(c) Omaha expenditure per capita is 0.09.
(d) Average expenditure per capita is 0.53.
(e) Omaha has one full time Arborist per 68,000 population.
(f) Average of one full time Arborist per 16,000 population.

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**Heller Greenhouse Laboratories**
218 East Pikes Peak Ave. Colorado Springs, Colorado

Rush.....dozen tubes of Heller-Gro with mailing cartons and Christmas labels.

Name .....

Address .....

City, Route or Zone.....State.....

Total.....enclosed. Ship postpaid in U. S.

In Canada write to:
**Norco Products Co., 95 King St., E. Toronto**


| | |
|---|---|
| | $ 5,949.00 |
| For Two Crews | $11,898.00 |
| Equipment for Street Tree Spraying | |
| (2) Rotomist Sprayers @ $3,600.00 | $ 7,200.00 |
| (4) 30-35 g. p. m. Hydraulic Sprayers @ $2,500.00 | 10,000.00 |
| | $ 17,200.00 |
| Aministrative personnel needed for the operation of entire street tree program | |
| (1) General Foreman @ $400 per month | $ 4,800.00 |
| (1) Bookkeeper @ $325 per month | 3,900.00 |
| (1) Stenographer @ $325 per month | 3,900.00 |
| | $ 12,600.00 |
| Non-Administrative Personnel | |
| (1) Mechanic @ $350 per month | $ 4,200.00 |
| (1) Mechanic Helper @ $300 per month | 3,600.00 |
| | $ 7,800.00 |
| TOTAL FOR STREET FORESTRY | $150,608.00 |
| Total Cost For Personnel For The Complete Street Tree Operation Per Year | $130,160.00 |
| Total Cost For Equipment For The Complete Street Tree Operation Per Year | $ 70,048.00 |

It will take a period of approximately ten years to correct our forestry problems that exist today. The operation, maintenance and replacement of the equipment plus the purchase of spray material, fertilizers and new trees will run at $35,000 per year.

In that forestry is a long range program, the best way to handle the financing of this operation is a ½ mill levy. This would cost the taxpayer an additional $.92 per $100.00 of taxes paid. When you consider that it costs from $50 to $250 to have a tree removed, $5 to $15 to have a tree sprayed, $5 to $25 to have a tree fertilized and any amount up to $50 to have a tree pruned, this is the most economical manner in which the taxpayer could have the trees cared for.

*Retiring President of the Plant Propagators Society Edward H. Scanlon hands over the gavel to incoming President Louis Vanderbrook. Hugh Steavenson, left, is the newly elected Vice President. Reelected Sec.-Treas. is Dr. Wm. E. Snyder, right. The 6th annual meeting was held in Cleveland Nov. 29-30-Dec. 1st.*

## Sayles

*(Continued from Page 6)*

show each group some of the problems of the others. Perhaps it indicates that, in previous years, we have all been too concerned with our own particular problems without recognizing that each group had its own technical problems of no small magnitude.

From the standpoint of the power companies, clearances from trees are essential to electric service and must be maintained. The maintaining of these clearances through trees of great height and dense growth can lead to only one result —heavy trimming and the partial loss of beauty and symmetry. Such is the dilemma which faces us. There must be better solutions to the problems. We can, by main strength and awkwardness, increase pole heights to the point where contacts are impossible, or we can remove the trees. Obviously, neither of these constitutes a complete solution to the problem.

*Awareness of the Problem*

Perhaps it has been due to a previous lack of reading of papers and magazine articles which deal with the selection and planting of trees on city streets and perhaps it was not, but it seems to me that, in very recent years, the ultimate solution of our problem has been indicated. There have been excellent articles written by leading tree authorities who advocate a new era of cooperation between electric utilities and those concerned with tree welfare. They recognize that their contribution to the problem can be the intelligent selection of trees to be planted in conflict areas and that there is always a proper tree of suitable character to fit the space limitations.

During recent years, at meetings of the Transmission and Distribution Committee of the Edison Electric Institute, there has been an increasing number of papers and discussions which relate to the problem of tree trimming, tree planting, and tree removal. This is because of the growing acuteness of tree problems and the fact that many millions of dollars are spent each year by utility companies for tree trimming and for the elimination of tree conflicts. Individual utilities have made excellent progress by cooperating closely with the appropriate state and municipal groups on long-range planning, while others have concerned themselves principally with the immediate problems of tree trimming.

*Cooperation Through Exchange of Information*

These events are most fortunate for all of us, and this conference should help to implement some of the suggestions already proposed. The problem of the arborist and forester is to select trees of known mature height and other suitable characteristics to grow without conflict with street lighting equipment and overhead electric lines. To do this correctly without a proper knowledge of what to expect in the way of height and location of these other facilities is impossible. Accordingly, it seems only proper that certain technical information should be made available to the forester and arborist by those responsible for planning the electric distribution systems and determining the types of construction. Much of the information needed will relate to costs of construction based upon widely varying characteristics of circuits in common use. For this reason the information should be local in character, based upon local costs of material and labor. It should also recognize local codes, ordinances, and other governing factors. The exchange and discussion of such information would be certain to establish a spirit of cooperation and a recognition of problems and situations previously unknown. This information could well cover such subjects as the following:

1. *Long-Range Planning of Overhead Systems*—There are few successful enterprises in which long-range planning does not have an important part. Power system engineers usually plan their facilities many years ahead, although it is fairly difficult to determine with exactness the nature of lines to be built on all streets and highways. The growth of the light and power industry in recent years has been tremendous, and the distribution engineer has been kept busy with consideration of such things as the basic pattern of power supply, changes in voltage, capacity of circuits, and economic factors associated with the fact that the capacity of his system will probably double within a decade or less. Nevertheless, fairly definite planning of future circuits should be expected of the electric utility companies. Even where the location of future circuits is only partially defined, the selection or rejection of tree types can be made with much greater assurance if future plans are known. Where such plans are not yet available, it would seem that a schedule of priorities for plans could be worked out which would focus attention upon locations where new planting is imminent. Perhaps continuing joint studies of street developments could yield a set of rules based upon type of area, street width, and other factors important to all interested parties. These rules could serve as guides for construction when street widening is planned or new subdivisions are contemplated.

2. *Short-Range Planning of Overhead Systems*—Rapid growth of load and frequent dislocations in the planned growth of an area often require an immediate change in character of a distribution circuit. When new construction is required, there should be an opportunity for a cooperative look at the problem. Perhaps the street in question has tall trees of a type already scheduled for ultimate removal because of interference with sidewalks and sewers. The power system change might be the incident to start tree replacement, long contemplated, with resulting benefits in street beautification through a more compatible selection of trees and poles. This illustration is but one of many which come to mind by mere mention of the factors involved.

3. *Character of Overhead Circuits*—It would seem that there should be merit in acquainting the tree specialist with a few of the technical considerations of overhead lines which distribution engineers frequently mention in their discussions. In this category are (1) the effect of voltage on clearance, (2) the effect of span length upon conductor sag—hence, clearance, (3) grounded circuits vs. ungrounded circuits, (4) vs. the physical requirements of the National Electrical Safety Code, and (5) the distinct difference between high-voltage primary and low-voltage secondary circuits.

The last item, the difference between primary and secondary circuits, is worthy of further comment because the distribution engineer uses the words "primary" and "secondary" quite casually in referring to distribution circuits. To him, "primary" means a high voltage which supplies power to distribution transformers. These transformers reduce the primary voltage to what is called the "secondary" voltage, which is used directly by the customer. The primary is measured in thousands of volts. The secondary is measured in hundreds of volts, usually 120 and 240. It should be obvious that primary circuits require greater clearances from trees than do secondary circuits. For this reason, secondary circuits are carried at lower levels and are frequently in the foliage area or under tree limbs. In these cases, occasional contacts

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are of little concern when wires have a covering, although some tree trimming is required to avoid severe contacts.

Street lighting circuits are worthy of special mention because their character has changed considerably in recent years. Originally, all street lighting circuits were of the "series" type which required high voltages of the same order as primary circuits. While there are many of these circuits still in common use, recent trends are toward the use of lower voltage secondary circuits, which reduce the clearance problem.

4. *Clearances Between Trees and Wires*—There is a wide variation in the type of conductors used for high-voltage electric circuits. Many years ago, practically all wires were of the weatherproof type in which a saturated cotton braid is used as a covering. These coverings have practically no insulating or abrasion value and cannot be permitted in close proximity to trees. Plastic coverings are also used but still require proper tree clearances. Bare wire is now used extensively. Regardless of wire coverings, it is believed that clearances of five feet are desirable for primary circuits, although lesser amounts often exist. In any event, clearances must be such as to allow for tree and wire movements under storm conditions, which can be very severe. It is believed that this is not always recognized and that great dependence is often placed on fixed clearance values which change with the seasons and, during high winds and storms, may not exist at all. It follows that important lines built under overhanging limbs and branches are in a precarious location.

5. *Effect of Pole Height on Cost of Construction* — The distribution engineer's resistance to the use of high poles is a natural one. They cost more, require a deeper hole, are harder to handle, and result in costlier construction. On the other hand, the engineer is particularly sensitive to reliability of service and will not hesitate to specify height if height alone is the answer.

It would seem that there could be a rather complete understanding between the engineer and the forester as to just how much the cost of lines is affected by their height. A table could be prepared showing the minimum cost of a typical high-voltage line on a city street. This cost would be based upon the minimum ground clearance at mid-span and, with customary allowances for telephone and service attachments, would result in the use of about a 35-foot pole. The resulting mid-span ground clearance would permit the planting of a tree which would have a mature height of about 20 feet. Starting from this minimum, costs could be indicated for successive intervals of height at mid-span and these costs could be related to the minimum. Obviously,

*(Continued on Next Page)*


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no single tabulation such as this can reflect costs for the entire country. The cost of a cedar pole in Ohio may be twice what it is in Oregon. Costs vary substantially as the result of climatic loading. Street patterns are exceedingly important. The cost of a line on a crooked street could be double that for a line on a street which has no curves. However, tabulations of considerable accuracy can be prepared on a local basis and should be most informative to arborists, foresters, and municipal planners—even to distribution engineers.

6. *Fixed Pole Locations and Span Lengths*—Based on the cost of poles and line materials, there is always a most economical span length for any distribution circuit and, given to his own devices, the distribution engineer will design a line accordingly. However, such freedom of design does not exist in city streets where a majority of all poles must be set in locations fixed by corners and property lines. This is a problem somewhat, but not entirely, independent of tree clearances. It is believed that further exploring of this situation might indicate the use of a smaller number of longer poles at street intersections or intermediate points to support the high-voltage lines. The lower voltage secondary circuits could be carried on shorter poles located at property lines. It is possible that such construction could result in low costs and a somewhat greater freedom in tree selection.

There would be a far greater degree of flexibility of design in an overhead line if it were not for the fixed locations which must be recognized. Not only street corners and lot lines must be used, but there are driveways, fire hydrants and underground pipes which frequently make pole locations very difficult. Sometimes there is a beautiful tree of great height, which, it would seem, could be avoided by crossing the street with the line. While this can sometimes be done, it usually results in a great confusion of guys and other pole attachments which are made necessary by an angle in the line. Also, the strength of the line is usually impaired while operation and maintenance are made more difficult.

7. *Use of High-Voltage Aerial Cable*—There is a belief that the widespread use of high-voltage aerial cable would practically eliminate conflict difficulties between power lines and trees because the high-voltage cables could be carried on high-strength messengers through the lower branches of large trees and the insulated cable would permit contacts with tree branches and make tree trimming unnecessary. It is true that there are locations where extenuating circumstances justify aerial cable use, but its cost is greater than that of open wire lines and tree trimming is still required. The cost of aerial cable is affected considerably by the voltage and character of the circuit.

Aerial cable is not designed for continuous abrasion such as occurs when in contact with tree limbs. Such situations inevitably result in damage to both the cable and trees because of tree movement during wind or storm conditions. Cable damage is far more difficult to locate and repair than are open wire circuits, and a cable failure usually results in a much longer interruption to electric service. While high-voltage aerial cable has been used for many years and has met with much success, it must be recognized that this cable must have adequate tree clearance, although not as much as for open wire lines. Therefore, tree trimming is not eliminated, it is simply lessened.

There are continuous new developments in aerial cable design. Developments range all the way from better insulated conductors with greater abrasive qualities to a more condensed version of an open wire line. Tree wire is often confused with aerial cable, to which it bears little resemblance. Certain new developments in progress will have excellent possibilities for general use if their cost is favorable. It is incumbent upon the design engineer to keep fully informed of new developments and to consider constantly the possibilities for or the limitations of their use.

In closing, it occurs to me that you may have been disappointed because of a lack of detailed suggestions or recommendations which could solve our problems. You will agree, however, that discussions must be fairly well limited to generalities when we recognize the wide range of tree conditions throughout our country. Scarcity of trees practically eliminates these problems in some areas. The tall elms and maples of the Middle West have little in common with the coconut palms of Florida and California. This conference is particularly concerned with planning for the future. It is believed that the thoughts expressed herewith can well be considered against this background.

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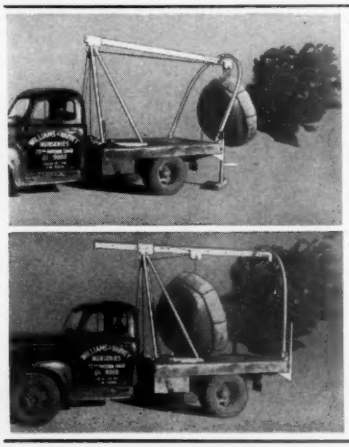

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## Program Seventh Arborists School New York State Arborists Association

*At New York State College of Agriculture a Unit of the State University of New York at Cornell University, Ithaca, N. Y.*
Statler Hall — January 13-14-15, 1957

**Sunday, January 13**

Evening meal—6-8 p. m. Smorgasbord for members.
Registration and fellowship. Faculty Lounge—7 to 11 p. m.
Director's Meeting—6 p. m. Chinese Room.

**Monday, January 14**

8-9 Coffee and registration.
9 a.m. Annual meeting—N. Y. State Arborists Ass'n.
11:00 The agricultural extension service helps arborists with garden club and service club meetings by motion pictures, slides and speakers through your county extension service.
12 Noon Luncheon. Convention Room, Statler Hall.
1 p. m. Tour of research of interest to arborists and in progress at the New York State College of Agriculture. Starting and care of gas engines; keeping a spray pump operating; arborist equipment; finding the right insecticide and fungicide; correcting iron defiiciency in woody ornamentals; poison ivy control for road and park side; Cornell Plantations.
6 p. m. Social Hour. Statler Hall.
7 p. m. Annual banquet for arborists and guests.
Speaker—Dr. J. George Matthysee, Department of Entomology, New York State College of Agriculture, a Unit of the State University of New York at Cornell. Subject—Philippine Experience — How We Are Helping in the Far East by Improving Control of Insect Pests.

**Tuesday, January 15**

8 a. m. Coffee.
8:45 "Surely You Know This." Recognition of Important insect pests, diseases and other problems. Cornell staff.
10:00 Panel Discussion. Problem areas in arboriculture.
Moderator—Kenneth Painter, First President of the New York State Arborists Association.
*When does a shade tree become a hazard needing to be removed?* Dr. R. R. Hirt, New York State College of Forestry, a Unit of the State University of New York at Syracuse University.
*Insect troubles on pines in New York State.* Dr. D. L. Collins, New York State Entomologist, State Science Service, Albany.
*Experiences in Massachusetts with Controlling borers and bark beetles.* Dr. W. B. Becker, Entomologist, University of Massachusetts, Amherst, Mass.
*Research on Systemic Treatments for Dutch Elm Disease.* Dr. Curtis May, Principal Pathologist, U. S D. A. Agricultural Research Service, Horticultural Crops Research Branch, Ornamental Plants Section, Beltsville, Md.
12 Noon Luncheon. Statler Hall Convention Room
Speaker—Prof. Donald E. Cullen, School of Industrial and Labor Relations, Unit of the State University of New York at Cornell University. Subject—Labor Relations Problems Today. *(Continued on Page 18)*

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## Arborists School

*(Continued from Page 17)*

1:10 Report from the Bureau of Plant Industry, Department of Agriculture and Markets, State of New York. Edwin Kirk, Director of the Bureau of Plant Industry, Albany.

1:30 Stump Removal in Action. Frank Karpick, Assistant Forester, Bureau of Forestry, Department of Parks, City of Buffalo. Experience with the sanitation program for control of Dutch Elm Disease in the City of Buffalo, N. Y.

2:15 Question Box.

2:40-3:00 Cost Analysis of Maintenance Work. George T. Swanson, Director of Cornell Plantations and University Grounds, Department of Buildings and Grounds, Cornell University.

## Federation Meet

*(Continued from Page 10)*

of Agriculture under Governor Meyner.

Alfred Funk, Naturalist, from Ramsey, N. J. showed and narrated a most interesting hour long colored motion picture, "Plants and Birds for the Winter Garden."

The meeting concluded with the largest attendance in its history and a program without precedent in the value of the information disseminated.

### For Your Calendar

Indiana Arborists' Association, Purdue Memorial Building, Lafayette, Ind. January 9-11, 1957

New York State Arborists' Association, Statler Hall, Cornell University, Ithaca, N. Y. January 13-14-15, 1957

Ohio Short Course for Arborists, Landscape Gardeners and Nurserymen, Neil House, Columbus, Ohio. January 21-23, 1957

Midwestern Chapter, N.S.T.C., Hotel Pfister, Milwaukee, Wisconsin. February 13-15, 1957

2nd Street Tree & Utility Conference; Hotel Cleveland, Cleveland, Ohio. March 7 - 8, 1957

Southern Chapter, N.S.T.C. Shamrock-Hilton Hotel, Houston, Texas. March 11-13, 1957

Western Chapter, N.S.T.C. Yosemite National Park at the Awahnee. May 9-11, 1957

National Shade Tree Conference, 33rd Convention. Sheraton Hotel, Philadelphia, Pa.

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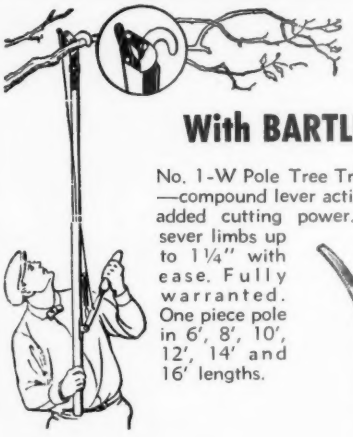

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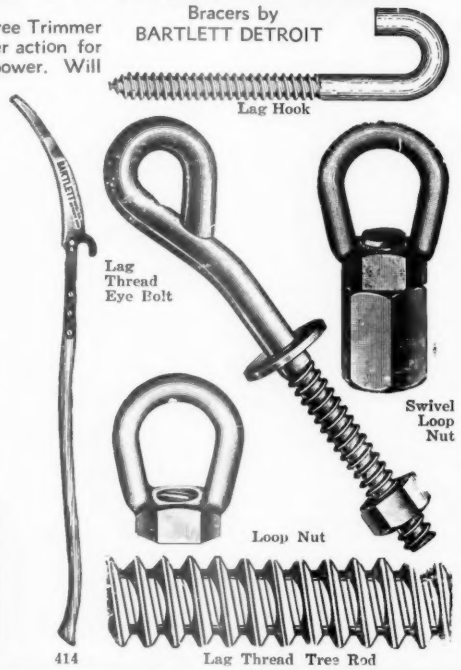


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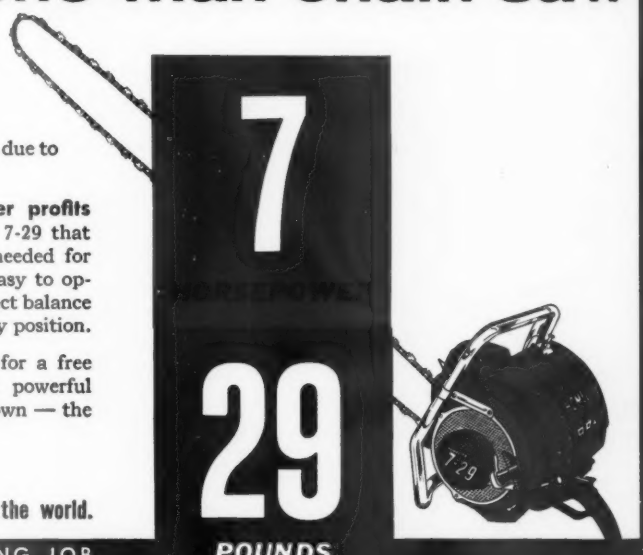


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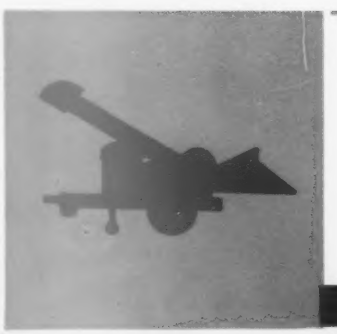

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